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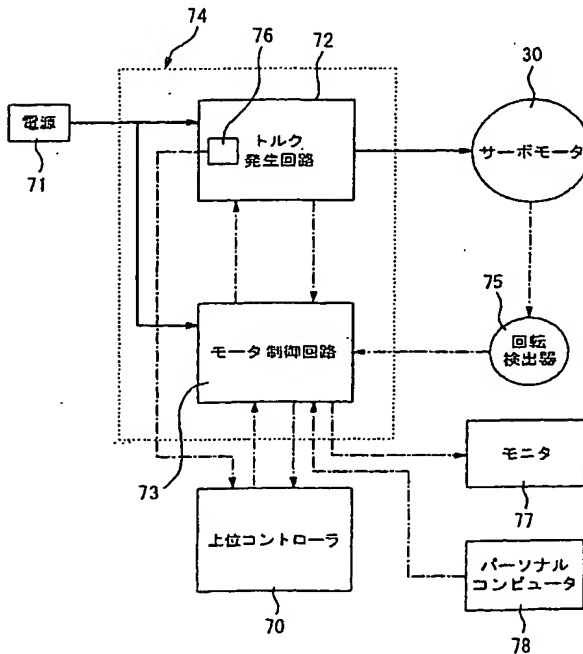
(10) 国際公開番号
WO 2004/025820 A1

- (51) 国際特許分類: H02P 5/00 (71) 出願人 (米国を除く全ての指定国について): 東京エレクトロン株式会社 (TOKYO ELECTRON LIMITED) [JP/JP]; 〒107-8481 東京都港区赤坂五丁目3番6号 Tokyo (JP).
- (21) 国際出願番号: PCT/JP2003/011732 (72) 発明者: および (75) 発明者/出願人 (米国についてのみ): 佐藤 秀明 (SATO, Hideaki) [JP/JP]; 〒841-0074 佐賀県鳥栖市西新町1375-4 1 東京エレクトロン九州株式会社 佐賀事業所内 Saga (JP).
- (22) 国際出願日: 2003 年 9 月 12 日 (12.09.2003) (74) 代理人: 吉武 賢次, 外 (YOSHITAKE, Kenji et al.); 〒100-0005 東京都千代田区丸の内三丁目2番3号富士ビル323号 協和特許法律事務所 Tokyo (JP).
- (25) 国際出願の言語: 日本語
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(続葉有)

(54) Title: ROTATION DRIVE DEVICE AND ROTATION DRIVE METHOD

(54) 発明の名称: 回転駆動装置及び回転駆動方法



- 71... POWER SOURCE
72... TORQUE GENERATION CIRCUIT
30... SERVO MOTOR
73... MOTOR CONTROL CIRCUIT
75... ROTATION DETECTOR
77... MONITOR
70... UPPER NODE CONTROLLER
78... PERSONAL COMPUTER

(57) Abstract: A rotation drive device includes a torque generation circuit (72) for generating torque of a servo motor (30) by voltage supplied from a power source (71), a motor control circuit (73) for controlling rotation of the motor, and a capacitor (76) arranged in the torque generation circuit (72) for detecting the supply voltage level and a lowering time in such a manner that the voltage lowering information detected by the capacitor (76) can be transmitted to an upper node controller (70). The upper node controller (70) stores in advance power recovery information on the voltage lowering and time under an instantaneous power interruption which can be recovered within a predetermined time and motor rotation control pattern information corresponding to the power recovery information and compares the voltage lowering information to the power recovery information and the motor rotation control pattern information, so as to control rotation of the servo motor (30) according to the control signal. Thus, by controlling the rotation while coping with the voltage lowering during drive, it is possible to suppress increase of the drive time, improve the throughput, and suppress vibration caused by the rotation stop as a result of voltage lowering.

(57) 要約: この回転駆動装置は、電源 71 からの供給電圧によってサーボモータ 30 のトルクを発生するトルク発生回路 72 と、モータの回転を制御するモータ制御回路 73 とを具備し、トルク発生回路 72 中に、供給電圧レベル及び低下時間を検出するコンデンサ 76 を設けると共に、コンデンサ 76 にて検出された電圧低下情報を上位コントローラ 70 に伝達可能に形成する。上位コントローラ 70 は、所定時間内に復電可能な瞬時停電の下での電圧低下及び時間の復電情報と、該復電情報に対応するモータの回転制御パターン情報とを予め記憶すると共に、電圧低下情報と復電情報とを比較処理し、その制御信号に基づいてサーボモータ 30 の回転を制御する。そして、駆動中の電圧低下に対応し

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/11732

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ H02P5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ H02P5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2003
Kokai Jitsuyo Shinan Koho 1971-2003 Jitsuyo Shinan Toroku Koho 1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2723764 B2 (Hitachi, Ltd.), 09 March, 1998 (09.03.98), (Family: none)	1-12
Y	JP 11-308894 A (Yaskawa Electric Corp.), 05 November, 1999 (05.11.99), (Family: none)	1-12
A	JP 4-161096 A (Matsushita Electric Industrial Co., Ltd.), 04 June, 1992 (04.06.92), (Family: none)	1-12
A	US 5426355 A (EXABYTE CORP.), 20 June, 1995 (20.06.95), & WO 95/13650 A1 & AU 9510927 A & EP 729668 A & JP 9-500519 A	1-12

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
02 December, 2003 (02.12.03)

Date of mailing of the international search report
16 December, 2003 (16.12.03)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

PATENT COOPERATION TREATY

WO 2004/025820
PCT/JP2003/011732

From the INTERNATIONAL BUREAU

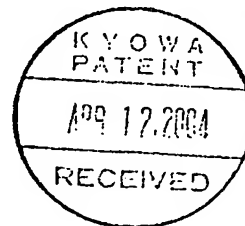
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NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

YOSHITAKE, Kenji
Kyowa Patent & Law Office
Room 323, Fuji Bldg.
2-3, Marunouchi 3-chome
Chiyoda-ku, Tokyo 100-0005
JAPON



Date of mailing (day/month/year) 25 March 2004 (25.03.2004)		
Applicant's or agent's file reference 142976-013		
IMPORTANT NOTICE		
International application No. PCT/JP2003/011732	International filing date (day/month/year) 12 September 2003 (12.09.2003)	Priority date (day/month/year) 13 September 2002 (13.09.2002)
Applicant TOKYO ELECTRON LIMITED et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

AU, AZ, BY, CH, CN, CO, DZ, EP, HU, JP, KG, KP, KR, MD, MK, MZ, RU, TM, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BZ, CA, CR, CU, CZ, DE, DK, DM, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 25 March 2004 (25.03.2004) under No. WO 2004/025820

4. **TIME LIMITS** for filing a demand for international preliminary examination and for entry into the national phase

The applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **30 MONTHS** from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of **19 months** from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the *PCT Newsletter*, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Gijsbertus Beijer - Carlos Roy
Facsimile No.(41-22) 740.14.35	Telephone No.(41-22) 338.91.11